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MEMORANDUM

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FEDERAL - STATE JOINT CONFERENCE
ON ADVANCED TELECOMMUNICATIONS SERVICES

Anchorage Field Hearing
APRIL 17, 2000
9:00 o'clock a.m.

Z.J. Loussac Library
Anchorage, Alaska

P R O C E E D I N G S

Tape 1

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(On record - 9:10 a.m.)

LT. GOV. ULMER: Ladies and gentlemen, thank you so much for coming this morning. MY name is Fran Ulmer and I'm going to be your moderator today. We have a very full agenda. I assume you've all seen it. We have a number of panels and a number of speakers, and at the end of the day an opportunity for public comment. I hope it is a day in which we all learn something, at least one thing, I suspect many of us will learn many things today.

We are very pleased to be able to welcome to Alaska FCC Commissioner Susan Ness. Susan Ness has visited Alaska on several occasions. And this weekend several of us had the opportunity to go to Kotzebue and really see some of the rest of Alaska beyond Anchorage's borders. And we had an excellent trip.

We'd like to start this morning with giving Susan the opportunity to give a few welcoming remarks. Susan.

COMMISSIONER NESS: Thank you very, very much. And it's a tremendous pleasure to be here with you today. I've had the great opportunity to get to know the Lieutenant Governor over the course of the last couple of years as she has served on a Federal State Local Advisory Council that has helped the FCC

work through a lot of very difficult issues involving federal local government, state government issues. And she's been an invaluable resource to us, so we're very appreciative. And it's a wonderful opportunity for me to at least thank her publicly for her service.

I also would like to take the opportunity to welcome everyone to the Western Regional Field Hearing of the Federal - State Joint Conference on Advanced Telecommunications Services. I'm pleased to see that there's so many people who have a tremendous interest in broadband deployment. And the issues that we're discussing today are vitally important for the country and for our local communities.

Participating in the new economy depends so heavily on access to advanced telecommunication services. Broadband infrastructure, which delivers the services such as high speed internet access, video conferencing is becoming an essential component of economic prosperity. And we have to ensure that all Americans are equally able to participate in this economic revolution. And one of the things that I certainly have learned as I've traveled the country, and in particular, traveled the state I recognize that the ability to have broadband communications can revitalize local economies.

And as someone said the other day, one of the things that we've ended up having to do is export our youth. And that's terrible. We don't want to export our youth to other areas of

the country or into the big cities. We want them to be able to live in the local communities and in the villages and be able to prosper there and bring revenue dollars back to the local markets. And so one thing that broadband can do more than anything else is to help revitalize those local marketplaces.

And the other thing that it can do is provide a better quality of life for all. We've seen demonstrations of this with telecommunications and distance education, and also telemedicine examples where it is extremely costly, particularly in the Bush to have to transport patients for diagnostic purposes when the ability to use telemedicine can, perhaps, result in not having to transport that particular patient, but treat them locally with the advice of experts in larger cities. So we look at this as an opportunity really to improve the quality of life for all Americans to revitalize local markets.

And we look -- the purpose for having this joint conference is really to gather the best ideas that we have around the country and to use this as a vehicle to share that information with everyone else. And so one of the things that I'm most interested in doing is hearing the success stories, hearing what folks have done in different markets to provide broadband communications to their citizenry.

And we hope at the end of this set of hearings, we're holding six hearings around the country, this is a joint

project with all of the state commissions, and the notion is at the end of the day to be able to put forward on web sites and distribute widely those best ideas that have worked elsewhere so that we can rapidly increase the deployment of broadband communications. So those were a couple of thoughts that I had at the very beginning of this.

Also one of the reasons why I wanted, in particular, to come to Alaska for this hearing was because of the incredible work that Nan Thompson has done. Nan Thompson is the Chair of the Joint Conference and she has been putting together all of these programs around the country and has done an incredible job. She's also done an incredible job working as the Chair of your State Public Utility Commission. And so I wanted to publicly thank her for her very, very hard efforts in pulling these pieces together and making an extraordinarily successful weekend demonstrations of telecommunications as well as enjoyment seeing the beauty and the magnificence of Alaska. Thank you very, very much, Nan, for all of your very, very hard efforts. So I believe now I'm to turn the comments over to Nan. Thank you very much.

CHAIR THOMPSON: Thank you. And thank you for your kind comments. We are very pleased to have you here, Commissioner Ness, and the other representatives of FCC staff that are here, Kathy Brown, who you'll hear from in a moment as well.

This Joint Conference is a cooperative effort between the

FCC and the State. And to me that as a State Commissioner is very important because the issue of broadband deployment is one that we need to work together to find the solutions to. So I'm very excited that the FCC has cooperated with and supported us as states in our effort to try and discover how we as regulators can better ensure deployment of broadband services.

The process that we on the Joint Conference have decided to use in fulfilling our mandate is two fold. We're going to do data gathering to try and find out more about where in the country services are not available and why. And in addition, to highlight successfully strategies and share those through a web site in hopes that we'll be able to provide a resource for regulators across the country who are looking for ways that they can make sure these services are deployed where they're needed.

As Commission Ness pointed out this is the second -- the Western Regional Hearing is the second of six hearings that will be held during the first half of this year. The Joint Conference is going to take the information we gather at these hearings as well as information submitted through the web site, produce a report, and again, make information available through a web site.

Today, Monday, is the fourth day of this Joint Conference visit. Last Friday we were in Tacoma where we heard from the State of Washington about some very innovative and successful

efforts to deliver advanced services there. Over the weekend, the group split into two and part of them went to Southeast to Sitka and over to Kake, and the rest of us went north to Kotzebue where I agree with Commissioner Ness and the Lieutenant Governor, we had a great time. The weather held out for us. It was a miracle. And the folks up there kept saying it's always like this, I thought ah, well. I don't know if I believe that, but it was wonderful weather and we had -- we were well treated by the community. We saw all kinds of efforts. We saw an example of a community that has worked very well together to achieve the successes that they have, but also a community that has some pretty dramatic needs. And I think that being able to have this Joint Conference up here to see and make a record of our state needs will help us tremendously in achieving the goals of deployment here in the state of Alaska.

The agenda today that you've all seen, we have four panels and we've divided the discussion into topic areas where we'll hear about satellite issues, telemedicine issues, distance education and economic development. We're here to make a record for the Joint Conference and to hear about, again, successful strategies for deployment that have been achieved and the needs that we have. And we're hoping to take that information back and combine it with what we learned elsewhere in the country to try and achieve the objectives of Section

706.

With that I'll introduce Kathy Brown from the FCC. She's Chairman Kennard's chief of staff, and she's here to make remarks on his behalf.

MS. BROWN: Thank you, Nan. Thank you for this opportunity to bring Bill Kennard's speaking to you, Lieutenant Governor Ulmer, and to you, Nan. And thank Commissioner Ness for being here. The Chairman, I think, would have loved to have made his second trip to Alaska this week as well, but he this morning is with President Clinton on the President's what he's calling new markets tour. And I think it's very fitting that these two things, the Joint Hearings are happening at the FCC at the same time that the President is going about the country to think about the new markets, and to think about how advanced telecommunication can serve those new markets.

So today the President with his group including the Chairman of the FCC start in Silicon Valley, and for a reason, I suppose, because that's where the incredible growth is happening of our information technologies. And they are then going to Ship Rock, New Mexico to the Navaho homeland there where they will talk about telecommunications on Indian reservations. Then they move tomorrow to Chicago to the innercities. And as that's going on the discussion is all about how advanced telecommunications can bring economic growth to all of the markets in America.

And so I want you to know that this is a concerted effort on the part of this administration and clearly on the part of this Commission and this Joint Board and this Joint Conference to determine and think about how advanced telecommunications can serve all our people's needs. And it's a really exciting thing for us to be involved in, clearly for me to be involved in to watch the planning and the thinking and the careful analysis that's going into taking what is a new -- a new opportunity for America to achieve greater growth, to achieve the kind of growth in education and health care and job opportunities that I know we've all been talking about together for a long time and we really see starting to come to fruition.

We're very proud of our participation with this Commission, with this Joint Conference with the Joint Board and the State and the work we've done at the FCC to ensure that federal policies facilitate and help state policies and state -- and local policies bringing new service providers and new services to all parts of America. We're particularly proud of the work that we've done on the E-Rate with over $25 million coming here to the state of Alaska, and to the work we've done on the rural health care side where back when we with Jim Posey's help we cracked some federal regulations and made sure we got some money here to Alaska for the health care programs that are run here.

I think of $3 million that have gone out in that program

about 650,000 of them came here to Alaska. And that's due to, I think, the strong work of Nan Thompson and people here in Alaska and the advocacy that we see all the time in Washington from the state. So I congratulate you and tell you how proud we are of the work we've done with you. So I too am looking forward to hearing from folks and learning a lot today. And I appreciate, again, Nan, Lieutenant Governor, Commissioner Ness, this opportunity to participate.

LT. GOV. ULMER: Thank you very much, Kathy, and thanks to all of you for coming. Our first panel this morning is on satellites, and while they are coming forward I will remind us of how important satellites are in Alaska. For those of you who are new to Alaska we are a huge state, Texas, California and Montana combined. It just helps, I think, for us to remember that we are a state that needs this technology perhaps more than any other state because of our huge size, because of our distance from markets, because of dispersed population.

Just as a little reminder, we have over 300 communities in Alaska. Only three of them have populations in excess of 10,000 people. And if you look kind of at some of the other statistics there are 23 communities that have populations between 1,000 and 10,000. And all the rest of those 300 plus have populations of less than 1,000. The vast majority of our communities are not connected by roads including our State capital. Most of our communities are only accessible by water

or by air, and that creates some really amazing challenges for a whole variety of service delivery by both the private and the public sector.

Our weather is extreme. I think that's the only one word that sums up Alaska's weather, extreme. And in the way that we must stay connected as a state as one big, small town as we are often referred to, telecommunications is absolutely essential. And, if course, satellites have been the answer for us for a very, very long time.

This morning's panel on satellites, we have some very distinguished people. I'll give you just a very, very brief summary of their resume so that you know who they are.

James Furstenberg of AT&T, a technical support engineer. Mr. Furstenberg provides technical support for systems design and maintenance of telecommunication systems used to serve rural Alaska communities. AT&T Alascom provides a variety of communication services to over 200 communities in Alaska.

Tom Brady with Microcom. Tom Brady is an expert on satellite issues in Alaska with Microcom. Tom has closely followed the deployment of satellites used for direct broadcast satellite service and is an advocate for increasing coverage of DBA to the entire state.

Chuck Russell of United Utilities. Chuck is vice president of United Utilities, which is a small, local exchange providing service primarily in the Yukon Kuskokwim region of

Alaska, a region that Commissioner Ness, I believe, visited in her previous trip to Alaska. It is small in terms of total access lines, about 5,000 but it's one of the largest LECs in terms of exchanges serving 58 communities.

Steve Hall with ACS, a network engineer. Steve Hall is a senior manager of network engineering for ACS, which is a local exchange provider to communities with over 75 percent of the access lines in the state. ACS provides wireless, internet and other advanced services.

And finally, Guy Christiansen, director of regulatory affairs, Skybridge, one of a new breed of satellite companies. Skybridge plans to use a constellation of 80 low earth orbiting satellites that will enable local access to broadband services anywhere in the world.

These gentlemen have all seen four questions that have been submitted. And we would like you to answer them, but instead of kind of going down the row and having everybody answer all four questions what I'd like to do with the panel is give you each five minutes to talk about the question that most appeals to you that you have something that you would most like to say something about this morning. And then I'd like to make sure that we have enough time for interaction among the panel members and the Commissioners that might want to ask questions so that we can have more of a dialogue, so let me ask who would like to go first this morning? A shy panel, I can't believe

it.

All right. We'll start right down there at the end. That will be fine. Thank you very much for joining us.

MR. HALL: If there's one theme to my comments that I would like to make is that as we all recognize is the critical nature of satellite capacity of serving Alaska. And there's been talking about the availability of that capacity to meet expanding needs beyond basic telephony and advanced services. And the theme of my response to the four questions is generally that there's thinking that there's a lack of capacity to meet the need.

And I'd like to stress that I think the capacity is there to meet that need and the problems to deal with are predominantly cost issues. If those cost issues can be favorably dealt with and the industry providing service in Alaska can see a return on the investment there is the opportunity to procure additional capacity that could provide more advanced services beyond the basic telephone service that's well served with the satellites today.

So with regard to the question on is the problem technology or is the problem cost and it's somewhat difficult to separate the answer to those two things 'cause it can always be argued that well, why can't technology just make it possible to deliver those services at lower costs, hence the problem is always technology. But with what's available today, and there

are some new things coming on the marketplace with regard to low earth orbit satellites in the years ahead that one of the other panelists, I'm sure, will talk about in greater detail. But with what's available today in the geostationary satellites they're, I believe, could be more capacity made available if it can be demonstrated that there'd be a return on the investment required to procure that capacity to provide those services.

LT. GOV. ULMER: Thank you, Steve. And if you would each of you state your name this is being recorded and that will help the recorder immensely later.

MR. HALL: Those were comments of Steve Hall from Alaska Communications Systems.

LT. GOV. ULMER: Would you like to go next?

MR. RUSSELL: Sure. Chuck Russell with United Utilities. I guess I don't really have prepared comments, but the first question on using transponders efficiently, I think right now we're -- for purposes of broadband data we're not using transponders efficiently. I think the E-Rate program, unfortunately, with the large subsidies doesn't foster efficient use of the transponder, so we're continuing to just do point to point satellite, whether it's 56k or higher for schools. And I think that's the way we're probably going with health clinics, too.

And I think if you were to look at those carriers they're probably empty 95 percent of the time. And so, you know,

although through the subsidies people can afford them it's not good a use of transponder capacity. I agree with Steve there's plenty of capacity, but over time that tends to get utilized, so I think it'd be important to start trying to use the capacity more efficient now since there's a limited number of satellites that see Alaska.

There's some mentioning of developments in technology. And that is happening, but given Alaska's geographic location far to the west typically these satellites that are being launched with new broadband technology do not cover Alaska. Hughes, Spaceway was mentioned, a big Ka band billion dollar program going on. I believe they've been assigned slots 99 and 101. Well, 101 is about a 5 degree look angle from Bethel, anything west of Bethel is dead in the water. So that's -- you know, that's a great thing but it's not going to provide any service to rural Alaska.

Teledesic is in deep financial trouble. I don't think anybody thinks that's going to be launched. You know, Uridian (ph) is out of business. It did serve Alaska. Its replacement, Global Star, although they say in their marketing stuff, you know, we serve North America, but North America to Global Star doesn't include Alaska.

So anyway, from my point of view as these new technologies and new satellite systems come on line it would be helpful if the FCC would ask the question of these people, do you serve

Alaska? And I mean ask it with enough specifics that you -- you know, that you get an honest answer. And if they don't serve Alaska then make a decision is that important or is it? And if it's important send them back to the drawing board. That's all I've got.

MR. FURSTENBERG: I'm Jim Furstenberg with AT&T Alascom. And I work primarily on the nuts and bolts ends of things rather than in the planning and development, so I approached this a little differently in that I've been working to bring communications to rural Alaska for 27 years and spend a lot of time out there. So I understand the problems and I field questions just about daily from users out there that are frustrated trying to use services out there.

AT&T Alascom currently is working to provide broadband service out there, and we're getting a little more successful every day, and like every other project we've certainly hit some stumbling blocks. With regard to the questions that were presented, the transponder capacity certainly can be used more efficiently and needs to be. My opinion is the most efficient way would be very broadband distribution to everybody, broadcast type basis. If we used a single transponder to send very high speed data that was collected by every village out that would be the most efficient way to use the transponder, rather than using individual carriers to just specific locations. There are a lot of reasons that I believe that, but

I can't go into them all here, but I do believe that broadcast type capability would be the best.

As Chuck mentioned just a minute ago a lot of that bandwidth that is out there goes to waste in that if we put a one megabyte pipe out to a village, if that pipe is used to actually transport useful information eight hours of the day that means there's a whole bunch of hours of the day that that bandwidth is not being utilized. So I don't think that any one of us can solve this problem efficiently by ourself. It's going to take users in the villages to get themself up to speed on current technology and find some way to integrate things to more efficiently share that bandwidth so that it's utilized 24 hours a day seven days a week. And, again, a wideband technology that broadcasts would be more productive in doing that.

With regard to the what's the most serious impediment to doing broadband out there in the Bush, it's money. I mean that's always what it is. There are technologies that may reduce that a little bit, but I don't see anything that's going to reduce the actual cost of bandwidth. Launch vehicles cost just as much today if not more than they did. The satellites cost just as much and maintaining them costs just as much if not more. So the only thing we're going to do to get the costs down is to increase -- improve efficiency. And by improving efficiency, again, that's going to have to be a joint effort.

Everybody is going to have to work together to do that.

Another thing that I'd like to point out is that even if we get bandwidth out there, and I guess this is where I get more flack than anything is, an equal amount of bandwidth. In other words, if I provide a one megabyte pipe to any village out there via satellite and they come to town and get demonstrate -- or see equipment demonstrated over a one megabyte pipe that is going over terrestrial facilities, when they go out to the Bush and it has the additional latency of the satellite transmission path, it will not perform the same no matter what. It will never give them the same performance. So they come to town, they get all enthused about using a technology that may go out there and they're disappointed.

And one little simple example of that is on Dial-Up data. Here's an example. Dialing into the internet through standard facilities using a 14.4 modem, which is about all we can reasonably supply out there to the Bush right now, if they connect in at 14.4 over satellite and -- and this was a test just going to a specific site, downloading a specific file, it was 149 seconds duration for 14.4 over the satellite and -- I'm sorry, over terrestrial at 14.4 it was 237 milliseconds -- or 237 seconds over the satellite. And the reason for that is because of all the handshaking.

Another thing is that as we try to extend basically the OSI layer out to the villages, the OSI layer was developed for

to improve the efficiency at very high speed and very reliable vote (ph) error transmission methods. Satellite is in terms of latency not near as high speed and it definitely has a lot higher errors. And it will never have fewer errors than a fiber system.

So the error correcting protocol that's used for TCPIP, for example, over there is such that it really chokes the system when you get into an error mechanism. So, consequently, we're working with other AT&T groups and with vendors to try to develop protocols that will overcome those things that will all take into account the satellite latency that definitely causes inefficiencies in the current technology.

So it's not just a matter of taking what we've got in threshold facilities and extending out over there. If we do that that will definitely not work efficiently.

LT. GOV. ULMER: Thank you very much.

MR. CHRISTIANSEN: Thank you. Guy Christiansen. I'm with a new company called Skybridge. One of the things that I want to do is try out a little different perspective. And the thought I want to put in your mind is when you're looking at using satellites or any technology for delivering broadband services, one of the first things you've got to ask yourself is was that technology designed to do what you're asking it to do. And a lot of the problems that we have today using existing satellites to provide broadband service to rural areas is

that's not what they were designed to do. So that really has an impact on the services you can provide, especially on the cost of that service, and the number of addressable customers, which is the bottom line for service providers.

I'll speak a little bit about the new services that are coming on line since my company will be one of those new service providers. And when you -- you know, with that thought I just placed in your mind think back a few years about C band television, satellite reception and what that was. That was basically piggy backing off of an existing service, an existing satellite service and trying to get back that service directly to the home. That wasn't what that technology was designed to do. It was designed to distribute television signals to cable head ends and network stations. But when you had a new generation of DBS satellites from companies like Echo Star and Direct TV that really changed things and that really brought the ability for satellites to address big markets. It really brought it home.

That's what we're going to see in the next few years and I'm not talking very far out. We're going to start seeing these technologies in 2002, 2003. My company, Skybridge, will start up in 2003 as we heard with a constellation of 80 satellites. And we actually are required by the proposed rules by the FCC to provide service up to Barrow, Alaska. As everyone else, Boeing, Boeing is a similar -- has a similar

proposal. And we will be able to provide very high speed services. We're talking 20 megabytes per second download, two megabytes per second up to a terminal.

It'll cost about $700 initially. And we're talking a small terminal about 18 inches, 20 inches high. And the monthly service cost will also be very affordable, about $30 a month. There are a number of different companies that are looking at providing this type of service. Skybridge. A company called I-Sky (ph), AstroLink and Spaceway. And we're all looking to provide the same type of thing. And one of the things that's very important as we talk to service providers, phone companies that want to provide this service is they want the price points to be where the price points for terrestrial technologies are. And that's what's driving the market.

They don't accept the satellite service that is a lot more expensive to provide in rural areas than in urban areas. That's a tough order to fill, but we think we can do it. And we're very excited about the technology that's going to be coming on line. And we're very hopeful to be part of the revolution that's going to be coming especially to rural areas.

And we think that when you see broadband to rural areas in the next few years where we are now is we're in the C band age. And where we're going to be is in the DBS age that is quickly coming on line. So I'll be happy to speak with any of you individually if you have questions or field questions later on

from the audience. Thank you very much.

LT. GOV. ULMER: Thanks, Guy.

MR. BRADY: Tom Brady from Microcom. I'd like to go back and address the capacity issues, but more from a strategic sense of satellites and where they're deployed. And if you look at the arc of satellites over North America serving the United States -- well, North and South America, and you look at Ku band specifically, and the reason I won't mention C band is Alaska is kind of unique in its use of C band in that it uses it for two-way services. If you look at the North American arc and you look at C band you see predominantly television, digital and analog video.

So when you look at Ku band you see 19 satellites deployed in that arc. Seven of them are west of the point we're they're simply not usable in Alaska. Ten of them are between about 90 and 110 degrees which will serve some portion of Alaska. Two of them are west of 110 degrees which have the probability of serving most if not all the state. Of those two satellites one of them represents all new capacity and that's Telstar 7. It didn't exist prior to October of last year. Galaxy 10 was a replacement for SBS-5, I believe.

So, consequently, when you look at availability of Ku band capacity to support Alaska and broadband internet you're only seeing one new platform. If you look at the whole North American arc you see most of the broadband internet services

deployed over satellite occurring in that eastern portion. Literally we're in the position that if I was in South America or Africa I could get very good internet service off Ku band, but none of those services are accessible here.

And do we have sufficient capacity to support broadband services? Definitely. I don't see any dispute there. It's a question of we're looking at roughly 400 megabytes of two-way capacity. And if it's used properly that should be sufficient for the next few years until, for example, Skybridge comes along or some of the advanced services.

The one thing that you learn about bandwidth is it's habit forming. You never consume less. You always consume more. Along that line we have to look toward the future. In Alaska here we've seen a 20 to 40 fold, depending on technology, increase in fiber capacity in the last 18 months. In fact, I think if you did a rough calculation you'd find out there's more raw bandwidth capacity per person in the Railbelt in Alaska than just about anywhere else in the U.S. if it was deployed properly.

That's not true in rural Alaska, of course, so we have to look toward the future about what services might we see. Well, you know, the funny thing is we're going to see the first of these here within six months if not sooner, and it's going to be the gallent (ph) to home product based around GE Ford 101 degrees. I actually got a chance to see it and feel it last

week. And it's an interesting little terminal. It's not substantially better outbound side than a Dial-Up system, but the downlink side is extremely good. And to some people who have been in the satellite business for awhile it's a leap of faith to buy $200 VSAT from Radio Shack which is exactly what they're going to be doing here in November and December.

The downside of that new service and the one that will follow it very quickly from direct -- well, from Hughes, is another two-way satellite service based around the 199 degree orbital slot is that there's only certain portions of Alaska that will get service. And it won't get service on $199 terminal, unfortunately. It'll get service on $1000 or $2000 terminal, but that's an improvement over what we have today. I think you're going to see a segment of the state of Alaska including Southeast, SouthCentral, and the Interior which will have access for the people willing to make the investment to a fairly robust satellite based internet service. That is, I think, a step in the right direction.

I think it's important that when we also look at future platforms such as I-Sky, which is due out next year, is they're going to be located at 109 1/2 degrees. They have the potential for covering a substantial amount of the state. In my preliminary discussions with them they have no intention of serving the state. Their business plan now calls for the 48 states. I don't think they include Hawaii. They do include